

**A Continuation of the Ocean-Atmosphere Sensor Integration System Project
(OASIS): A Wallops Coastal Ocean Observation Laboratory Project**
Virginia's Center for Innovative Technology

This collaborative effort between Virginia's Center for Innovative Technology (CIT), NASA Wallops Flight Facility (WFF), NOAA and a number of academic institutions will monitor the influence of the Chesapeake Bay on the adjacent coastal ocean margin ecosystems through the development, deployment and use of various ocean observation tools. Coastal regions within the Mid-Atlantic Bight (MAB) are directly influenced by regional freshwater fluxes that emanate from several large bay systems (Delaware and Chesapeake Bays). The outflows from these bays have high sediment loads and high levels of nutrients, particulate and dissolved organic matter (POM, DOM) that heavily influence the adjacent coastal margin ecosystems.

The focus of this project is to establish an ocean observing system along the coastal ocean regions of Virginia, Maryland and Delaware. This will be accomplished by developing, testing, and deploying new sensors, platforms and applications to support NOAA and NASA coastal ocean remote sensing activities and products. This includes a fleet of solar-powered surface autonomous vehicles called the Ocean-Atmosphere Sensor Integration System (OASIS) being commercialized with support from NASA's Small Business Innovation Research (SBIR) program. Software is being developed for command and control of multiple OASIS platforms to support real-time dynamic mapping capabilities. A Coastal Bio-Optical buoy (COBY) will be deployed and maintained during biweekly cross-shelf surveys.

The project proposes to continue investigating the interactions between biology and physics in this ocean margin system. In the first year of this effort, an objective is creation of a full surface current product for the Mid-Atlantic Coastal Ocean Regional Association (MACORA) by maintaining a system of three long-range and two standard-range high frequency (HF) radars for measuring surface currents. Finally, the project is establishing and fostering new collaborations with regional partners and is developing strong educational and outreach efforts. Field observations will be obtained using standard protocols. Real-time observations will be archived onto our CODAAC data handling system and made available to the public using OpenDAP protocols.

Project partners include: NASA, NOAA/ETL, NOAA/National Ocean Service (NOS), Old Dominion University, Rutgers University, Donald L. Blount & Associates, DLBA Robotics, Emergent Technologies, EG&G Services, SGT, University of Maryland, Virginia Marine Science Consortium, and Pacific Gyre and Noesis.